# IN THE UNITED STATES DISTRICT COURT FOR THE SOUTHERN DISTRICT OF NEW YORK

SIGNIFY NORTH AMERICA CORPORATION and	)
SIGNIFY HOLDING B.V.,	) C. A. No. 1:19-CV-5516-DLC
Plaintiffs,	) JURY TRIAL DEMANDED
v.	)
AXIS LIGHTING INC.,	)
Defendant.	)
	)

#### **Joint Disputed Claim Terms Chart**

Pursuant to Local Patent Rule 11 and the Pretrial Scheduling Order, Plaintiffs Signify
North America Corporation and Signify Holding B.V. (collectively, "Signify") and Defendant
Axis Lighting, Inc. ("Axis") submit the following Joint Disputed Claim Terms chart, listing the
disputed claim terms and phrases, including each party's proposed construction, and crossreference to each party's identification of the related paragraph(s) of the invalidity and/or
infringement contention(s) disclosures under Local Rules 6 and 7.

### 1. <u>U.S. Patent No. 6,577,512</u>

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
"a protective circuit limiting the current to the LEDs"  (claim 19)	Plain and ordinary meaning or, alternatively, "circuitry that keeps undesirably large current from being supplied to the LEDs"	35 U.S.C. § 112 ¶ 6 limitation.  Function: "limiting the current to the LEDs."  Structure: the claim is indefinite because the "flyback converter" that purportedly "controls the current to the LEDs" is insufficient structure to perform the function.  Alternatively, if it is determined to be sufficient structure, the "flyback converter" is the corresponding structure.	Signify's Infringement Contentions, Ex. 1 at 27; Ex. 2 at 26.  Axis' Invalidity Contentions, Ex. B-1 at 8–9; Ex. B-2 at 7–8; Ex. B-3 at 8, 10.
"a protective circuit limiting the voltage to the LEDs" (claim 38)	Plain and ordinary meaning or, alternatively, "circuitry that keeps undesirably large voltage from being supplied to the LEDs"	35 U.S.C. § 112 ¶ 6 limitation.  Function: "limiting the voltage to the LEDs."  Structure: the claim is indefinite because the "zener diode Z1" that purportedly "provides overvoltage protection for LEDs" is	Signify's Infringement Contentions, Ex. 2 at 58. Axis' Invalidity Contentions, Ex. B-1 at 11; Ex. B-2 at 8, 10; Ex. B-3 at 10.

		insufficient structure to perform the function.  Alternatively, if it is determined to be sufficient structure, the "zener diode Z1" is the corresponding structure.	
"a current sensor for sensing current to the LEDs, the current sensor generating a sensed current signal" (claims 19, 38)	Plain and ordinary meaning or, alternatively, "circuitry that senses current to the LEDs and generates a sensed current signal"	35 U.S.C. § 112 ¶ 6 limitation.  Function: "sensing current to the LEDs" and "generating a sensed current signal."  Structure: the claim is indefinite because the "current sensor 110" that purportedly "measures the current flow to the LEDs 106 and provides a sensed current signal" is described entirely functionally in the specification, and, thus, is insufficient structure to perform the function.	Signify's Infringement Contentions, Ex. 1 at 10; Ex. 2 at 9, 39.  Axis' Invalidity Contentions, Ex. B-1 at 3, 10; Ex. B-2 at 3, 9–10; Ex. B-3 at 3, 9.
"a current reference for generating a reference current signal"  (claims 19, 38)	Plain and ordinary meaning or, alternatively, "circuitry that generates a reference current signal"	35 U.S.C. § 112 ¶ 6 limitation.  Function: "generating a reference current signal."  Structure: the claim is indefinite because the "current reference 114" is not linked to the claimed function and is	Signify's Infringement Contentions, Ex. 1 at 13; Ex. 2 at 13, 43.  Axis' Invalidity Contentions, Ex. B-1 at 4, 10; Ex. B-2 at 4, 10; Ex. B-3 at 4, 9.

		insufficient structure to perform the function.	
"a current controller for comparing the sensed current signal to the reference current signal, the current controller generating a feedback signal" (claims 19, 38)	Plain and ordinary meaning or, alternatively, "circuitry that compares the sensed current signal to the reference current signal and generates a feedback signal"	35 U.S.C. § 112 ¶ 6 limitation.  Function: "comparing the sensed current signal to the reference current signal" and "generating a feedback signal."  Structure: a proportional type op-amp control circuit.	Signify's Infringement Contentions, Ex. 1 at 15; Ex. 2 at 15, 45. Axis' Invalidity Contentions, Ex. B-1 at 5–6, 10; Ex. B-2 at 5–6, 10; Ex. B-3 at 5–6, 9.

### 2. <u>U.S. Patent No. 7,014,336</u>

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
"electromagnetic radiation of at least two different spectrums"  (claim 132)	Plain and ordinary meaning or alternatively, "emissions of electromagnetic energy, each having a different intensity as a function of wavelength"	Light of at least two different wavelengths or combinations of wavelengths.	Signify's Infringement Contentions, Ex. 3 at 6–11. Axis' Invalidity Contentions, Ex. G-1 at 1–2, Ex. G-2 at 4– 10; Ex. G-3 at 2–6; Ex. G-4 at 2–5; Ex. G-5 at 2–6; Ex. G-8 at 3–7; Ex. G-9 at 2–13.
"a mounting" (claim 132)	Plain and ordinary meaning; or, alternatively, "a support on which the plurality of component illumination sources are mounted"	Indefinite	Signify's Infringement Contentions, Ex. 3 at 11–15, 54–56.  Axis' Invalidity Contentions, Ex. G-1 at 2–3, 21–22; Ex. G-2

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
			at 10–16, 44; Ex. G-3 at 6–11, 18–20; Ex. G-4 at 5–11, 25; Ex. G-6 at 1–7; Ex. G-7 at 2–7; Ex. G-8 at 7–12, 57–59; Ex. G-9 at 13–21, 54–57.
"resulting spectrum" (claims 132, 141)	Plain and ordinary meaning or alternatively, "intensity of the radiation as a function of wavelength that results from the combination of light produced by the plurality of component illumination sources"	The resultant combination of wavelengths of light that result in the light produced by a lighting fixture	Signify's Infringement Contentions, Ex. 3 at 11–18, 36–44.  Axis' Invalidity Contentions, Ex. G-1 at 2–4, 14–19; Ex. G-2 at 10–21, 37–42; Ex. G-3 at 6– 12, 15–17; Ex. G-4 at 5–13; Ex. G-5 at 6–16, 17; Ex. G-6 at 1–4; Ex. G-7 at 2–7, 12; Ex. G-8 at 7–24, 46–53; Ex. G-9 at 21–37, 53.
"the visible portion of said resulting spectrum"  (claim 132)	"the range of said resulting spectrum between approximately 400 nm and 700 nm"	The light of said resulting spectrum, which has a color that is visible, i.e., a wavelength in the range from about 400 nm to about 700 nm	Signify's Infringement Contentions, Ex. 3 at 15-18. Axis' Invalidity Contentions, Ex. G-1 at 3-4; Ex. G-2 at 16- 21; Ex. G-3 at 11-12; Ex. G-4 at 11-13; Ex. G-5 at 6-16; Ex. G-8 at 12-24; Ex. G-9 at 21-37.
"a controller"	Plain and ordinary meaning or, alternatively, "circuitry used to control the plurality of	35 U.S.C. § 112 ¶ 6 limitation.	Signify's Infringement Contentions, Ex. 3 at 22–27.

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
(claim 138)	component illumination sources"	Function: control the plurality of component illumination sources to selectably generate the white light from the lighting fixture at a particular color temperature within said range of color temperatures.  Structure: "computer hardware or computer software; a sensor such as, but not limited to a photodiode, a radiometer, a photometer, a colorimeter, a spectral radiometer, a camera; or a manual interface such as, but not limited to, a slider, a dial, a joystick, a trackpad, or a trackball" "for specifying illumination conditions to be provided by the lighting fixture."	Axis' Invalidity Contentions, Ex. G-1 at 7–10; Ex. G-2 at 28–32; Ex. G-3 at 14–15; Ex. G-4 at 17; Ex. G-8 at 27–34; Ex. G-9 at 44–52.
"first radiation having a first spectrum" (claim 141)	Plain and ordinary meaning or alternatively, "a first emission of electromagnetic energy having a first intensity as a function of wavelength"	First combination of wavelengths of light	Signify's Infringement Contentions, Ex. 3 at 32–34. Axis' Invalidity Contentions, Ex. G-1 at 10–12; Ex. G-2 at 32–34; Ex. G-3 at 15; Ex. G-4
			at 18; Ex. G-5 at 16; Ex. G-7 at

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
			11–12; Ex. G-8 at 42–45; Ex. G-9 at 52.
"second radiation having a second spectrum"  (claim 141)	Plain and ordinary meaning or alternatively, "a second emission of electromagnetic energy having a second intensity as a function of wavelength"	Second combination of wavelengths of light	Signify's Infringement Contentions, Ex. 3 at 34–36. Axis' Invalidity Contentions, Ex. G-1 at 12–14; Ex. G-2 at 34–37; Ex. G-3 at 15; Ex. G-4 at 18; Ex. G-5 at 17; Ex. G-8 at 45–46; Ex. G-9 at 52.
"control circuit" (claim 153)	Plain and ordinary meaning or, alternatively, "circuitry used to control the intensity of the at least one first and at least one second white LEDs"	35 U.S.C. § 112 ¶ 6 limitation.  Function: independently control at least a first intensity of the first radiation and a second intensity of the second radiation.  Structure: "computer hardware or computer software; a sensor such as, but not limited to a photodiode, a radiometer, a photometer, a colorimeter, a spectral radiometer, a camera; or a manual interface such as, but not limited to, a slider, a dial, a joystick, a trackpad, or a trackball" "for specifying illumination conditions to be	Signify's Infringement Contentions, Ex. 3 at 45–49. Axis' Invalidity Contentions, Ex. G-1 at 12–20; Ex. G-2 at 43; Ex. G-3 at 17; Ex. G-4 at 23–24; Ex. G-5 at 17–21; Ex. G-8 at 53–57; Ex. G-9 at 53– 54.

Disputed Claim Term or	Signify's Proposed	Axis' Proposed Construction	Cross-Reference to
Phrase	Construction		Disclosures
		provided by the lighting fixture."	

## 3. <u>U.S. Patent No. 7,255,458</u>

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
"substrate" (claims 1, 21)	Plain and ordinary meaning or alternatively, "a support on which light emitting elements are integrated"	A base	Signify's Infringement Contentions, Ex. 4 at 5–9, Ex. 5 at 5–8, 16–19. Axis' Invalidity Contentions, Ex. E-1 at 2–7, 17–19; Ex. E-2
"linear array" (claim 17)	Plain and ordinary meaning or alternatively, "a one- dimensional array of elements whose corresponding points lie in a line"	an array of elements whose corresponding points lie in a line	at 2–4, 11; Ex. E-3 at 1–3.  Signify's Infringement Contentions, Ex. 4 at 18–22.  Axis' Invalidity Contentions, Ex. E-1 at 11–16; Ex. E-2 at 8– 11; Ex. E-3 at 3.
"planar array" (claim 21)	Plain and ordinary meaning, or alternatively, "two-dimensional array of elements whose corresponding points lie in a plane"	an array of elements whose corresponding points lie on a flat surface	Signify's Infringement Contentions, Ex. 5 at 15–19. Axis' Invalidity Contentions, Ex. E-1 at 17–19; Ex. E-2 at 11; Ex. E-3 at 11-12.

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
"diffuser" (claim 1)	Plain and ordinary meaning or alternatively, "a device that scatters incident electromagnetic radiation, including visible light, infrared and ultraviolet radiation by means of diffuse transmission or reflection into a variety of luminance distribution patterns"	A device which operates on a microscopic scale, wherein illumination enters the diffuser at an input angle, and exits the diffuser within a range of angles formulaically dependent on the input angle, wherein the range of diffusion depends on the surface structure of the diffuser, that is not a bulk diffuser.	Signify's Infringement Contentions, Ex. 4 at 9–15, Ex. 5 at 9–14.  Axis' Invalidity Contentions, Ex. E-1 at 7–11; Ex. E-2 at 4– 7.
"proximate to" (claim 1)	Plain and ordinary meaning or alternatively, "very near or close to"	Immediately preceding or following	Signify's Infringement Contentions, Ex. 4 at 9–15, Ex. 5 at 9–14. Axis' Invalidity Contentions, Ex. E-1 at 7–11; Ex. E-2 at 4– 7; Ex. E-3 at 11-12.
"redirecting the illumination in one or more predetermined directions"  (claim 1)	Plain and ordinary meaning or alternatively, "altering the direction of illumination in one or more chosen directions"	Altering the direction of illumination in one or more directions depending on the angle that the illumination enters the diffuser and the microscopic surface structure of the diffuser.	Signify's Infringement Contentions, Ex. 4 at 9–15, Ex. 5 at 9–14  Axis' Invalidity Contentions, Ex. E-1 at 7–11; Ex. E-2 at 4– 7.

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
"concentrating the illumination in one or more predetermined directions"  (claim 1)	Plain and ordinary meaning or alternatively, "creating a non- uniform intensity of illumination in one or more chosen directions"	Intensifying the illumination non-uniformly in one or more directions depending on the angle that the illumination enters the diffuser and the microscopic surface structure of the diffuser.	Signify's Infringement Contentions, Ex. 4 at 9–15, Ex. 5 at 9–14.  Axis' Invalidity Contentions, Ex. E-1 at 7–11; Ex. E-2 at 4– 7.
"a power system for controlling the illumination produced by the light-emitting elements"  (claim 1)	"power system configured to regulate the flow of energy to the light-emitting elements"	35 U.S.C. § 112 ¶ 6 limitation and indefinite.  Function: "provide[] energy to the light-emitting elements" and "provide[] a means for controlling the illumination produced by the light-emitting elements through the regulation of the flow of energy thereto."  Structure: N/A	Signify's Infringement Contentions, Ex. 4 at 16-18; Ex. 5 at 14-15.  Axis' Invalidity Contentions, Ex. E-1 at 11; Ex. E-2 at 7; Ex. E-3 at 3.

## 4. <u>U.S. Patent No. 7,256,554</u>

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
"first radiation"	Plain and ordinary meaning or alternatively, "first emission of	First emission of wavelengths of light	Signify's Infringement Contentions, Ex. 6 at 7, 20, 37,
(claims 1, 6, 46, 51)	electromagnetic energy"		45, 78, 85–86, 116.  Axis' Invalidity Contentions, Ex. F-1 at 4–5, 16, 23–24, 27; Ex. F-2 at 1–3, 13, 22–23, 26; Ex. F-3 at 2, 4, 16, 25–26, 29; Ex. F-4 at 2, 4, 15–16, 24, 28; Ex. F-5 at 2–3, 21–22, 33–34, 38; Ex. F-6 at 1–2, 14, 21–22, 24; Ex. F-7 at 1–2, 9–10; Ex. F-8 at 2–3, 13–14, 18, 21; Ex. F-9 at 1–2, 13, 18, 21; Ex. F-10 at 1–2, 12, 14–15.
"first spectrum" (claims 1, 6, 46, 51)	Plain and ordinary meaning or alternatively, "first intensity as a function of wavelength"	First combination of wavelengths of light	Signify's Infringement Contentions, Ex. 6 at 7, 37, 78, 116.
(Claims 1, 0, 70, 31)	a function of wavelength		Axis' Invalidity Contentions, Ex. F-1 at 2–3, 16, 23, 27; Ex. F-2 at 1–2, 13, 22, 26; Ex. F-3 at 2, 4, 16, 25, 29; Ex. F-4 at 2, 4, 15, 24, 28; Ex. F-5 at 22, 33, 38; Ex. F-6 at 1, 14, 21, 24; Ex. F-7 at 1,9; Ex. F-8 at 2–3,

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
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"feed-forward driver" (claims 1, 2, 6)	Plain and ordinary meaning, or alternatively, "a power control apparatus that provides power to a load without requiring feedback information from the load"	A driver that utilizes information known in advance regarding a desired power to be provided to the light source to control the intensity of radiation generated by the light source based on modulating the average power delivered to the light source in a given time period, without monitoring and without regulating the voltage or current provided to the light source.	Signify's Infringement Contentions, Ex. 6 at 25, 44– 45, 48.  Axis' Invalidity Contentions, Ex. F-1 at 4, 7, 13, 16, 20; Ex. F-2 at 2, 5, 7, 13–14, 18; Ex. F-3 at 4, 6, 10, 16–17, 21; Ex. F-4 at 4, 6, 12, 15–16, 19–20; Ex. F-5 at 2, 7, 12, 22, 26–27; Ex. F-6 at 1, 4, 7, 14, 18;; Ex. F-7 at 1, 3, 6, 9–10, 12–13; Ex. F-8 at 3, 5, 8, 13–14, 16; Ex. F-9 at 1, 5, 8, 13, 15; Ex. F-10 at 2–3, 5.

## 5. <u>U.S. Patent No. 7,288,902</u>

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
"light source driver controller" (claim 1)	Plain and ordinary meaning or, alternatively, "circuitry that causes the light source driver to	A component which causes the light source driver to change the brightness of the light	Signify's Infringement Contentions, Ex. 7 at 22–27.
	vary the first and second drive currents"	sources	Axis' Invalidity Contentions, Ex. D-1 at 17–22; Ex. D-2 at 21–28; Ex. D-3 at 6–7; Ex. D-4

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
			at 18–27; Ex. D-5 at 9–11; Ex. D-6 at 18–22; Ex. D-7 at 20–26.

## 6. <u>U.S. Patent No. 7,352,138</u>

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
"A.C power source that provides signals other than a standard A.C. line voltage"/ "alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage"  (claims 1, 33)	"a power source that provides two or more alternating current (A.C.) signals, each being other than a sinusoidal wave at a standard frequency and amplitude"	Alternating current (A.C.) power source that provides two or more signals other than a standard A.C. line voltage	Signify's Infringement Contentions, Ex. 8 at 11–14, 54-61. Axis' Invalidity Contentions, Ex. C-1 at 3–5, 17; Ex. C-2 at 3–5, 23–24; Ex. C-3 at 5–6, 22; Ex. C-5 at 3–5, 19–20.
"duty cycle" (claim 10)	Plain and ordinary meaning or alternatively, "ratio of the active or 'on' time within a specified period"	The ratio of pulse duration to pulse period, which may also be expressed as a percentage	Signify's Infringement Contentions, Ex. 8 at 30-32. Axis' Invalidity Contentions, Ex. C-1 at 8-10; Ex. C-2 at 11- 13, 20, 22; Ex. C-3 at 12-13; Ex. C-4 at 2, 4; Ex. C-5 at 10- 11;

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
1 III ase	Construction		Disclosures
"[alternating current] (A.C.)	"a circuit that provides an	Plain and ordinary meaning	Signify's Infringement
dimmer circuit"	alternating current (A.C.)		Contentions, Ex. 8 at 22–27,
	dimming signal"		61–65.
(claims 2, 9, 34)			
			Axis' Invalidity Contentions,
			Ex. C-1 at 6–7, 18; Ex. C-2 at
			7–8, 24; Ex. C-3 at 8–9, 22–23;
			Ex. C-4 at 1–2; Ex. C-5 at 6–9,
			20; Ex. C-6 at 5–6, 13; Ex. C-7
			at 6–8, 12; Ex. C-8 at 4–5, 11.

#### 7. <u>U.S. Patent No. 7,703,951</u>

Disputed Claim Term or Phrase	Signify's Proposed Construction	Axis' Proposed Construction	Cross-Reference to Disclosures
"modular"	Plain and ordinary meaning or alternatively, "includes	Allowing for easy installation, removal, and replacement by	Signify's Infringement Contentions, Ex. 9 at 2–6.
(claim 35)	modules"	the user of light-generating modules and controller modules	Axis' Invalidity Contentions, Ex. A-1 at 1–2; Ex. A-2 at 1–3; Ex. A-3 at 1–2; Ex. A-4 at 1–2.

Dated: November 20, 2020

#### /s/ C. Brandon Rash

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#### **CERTIFICATE OF SERVICE**

I hereby certify that true and correct copies of the foregoing was served this 20<sup>th</sup> day of November, 2020 on the following parties via this Court's ECF Filing system:

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